



Element Materials Technology - Fort Wayne
328 Ley Rd.
Fort Wayne, IN 46825
TEL: (260) 424-1622 FAX: (260) 424-9124
Website: www.element.com

November 19, 2019

Nickie Geros
East Chicago Sanitary District
5201 Indianapolis Blvd
East Chicago, IN 46312
TEL: 219-391-8466
FAX:

RE: S-901

Order No.: 19110733

Dear Nickie Geros:

Element Materials Technology - Fort Wayne received 2 sample(s) on 11/7/2019 for the analyses presented in the following report.

In accordance with your instructions, Element Materials Technology Indiana conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis was conducted using approved methodologies from EPA, SM, or other client-specified methods. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Element Materials Technology Indiana.

This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ryan Fitzwater
General Manager
328 Ley Rd.
Fort Wayne, IN 46825

Original



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Website: www.element.com

Case Narrative

WO#: 19110733
Date: 11/19/2019

CLIENT: East Chicago Sanitary District

Project: S-901

The available cyanide testing was subcontracted to Test America/Eurofins Eaton Analytical. Their report is attached in its entirety.

The surrogate recovery was outside of acceptance limits for the 625_Special analysis on sample 19110733-001c due to suspected matrix interference. This data is reported based upon the acceptable recoveries in additional associated QC.



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Analytical Report

(wastewater)

WO#: 19110733

Date Reported 11/19/2019

CLIENT: East Chicago Sanitary District **Collection Date:** 11/6/2019 9:31:00 AM
Project: S-901
Lab ID: 19110733-001 **Matrix:** WASTEWATER
Client Sample ID #901
Sample Location:

Analyses	Result	RL	Qual	Units	DF	PL	Date Analyzed
OIL AND GREASE, TOTAL					E1664		Analyst: HF
Oil & Grease, Total	20.2	5.0		mg/L	1	50.0	11/8/2019 11:21:02 AM
OIL AND GREASE, NON POLAR					E1664		Analyst: HF
Oil & Grease, Petroleum	10.9	5.0		mg/L	1	50.0	11/12/2019 1:29:58 PM
SV COMPOUNDS FOR CATEGORICAL RQTS					E625		Analyst: SF
Bis(2-ethylhexyl)phthalate	< 0.020	0.020		mg/L	2	0.16	11/12/2019 7:38:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Original



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Analytical Report

(wastewater)

WO#: 19110733

Date Reported 11/19/2019

CLIENT: East Chicago Sanitary District **Collection Date:** 11/6/2019 9:31:00 AM
Project: S-901
Lab ID: 19110733-002 **Matrix:** WASTEWATER
Client Sample ID #901
Sample Location:

Analyses	Result	RL	Qual	Units	DF	PL	Date Analyzed
FLUORIDE					E300.0		Analyst: HN
Fluoride	2.1	0.2		mg/L	2	2.9	11/8/2019 10:31:47 AM
CHEMICAL OXYGEN DEMAND					M5220 D		Analyst: NB
Chemical Oxygen Demand	397	10.0		mg/L	1		11/12/2019 7:55:00 AM
AMMONIA AS N					E350.1		Analyst: AC
Nitrogen, Ammonia (As N)	0.401	0.100		mg/L	1	77.0	11/12/2019 4:10:24 PM
PHENOLICS IN WASTEWATER					E420.1		Analyst: ANS
Phenolics, Total Recoverable	0.056	0.050		mg/L	2	0.700	11/12/2019 3:15:40 PM
TOTAL PHOSPHORUS					M4500-P F		Analyst: HN
Total Phosphorus	0.296	0.100		mg/L	1	5.50	11/11/2019 3:53:43 PM
TOTAL SUSPENDED SOLIDS					M2540 D		Analyst: MAH
Suspended Solids (Residue, Non-Filterable)	73	27		mg/L	1		11/11/2019 4:50:00 PM
MERCURY					E245.1		Analyst: FJR
Mercury	< 0.00010	0.00010		mg/L	1		11/8/2019 1:17:01 PM
METALS IN WATER BY ICP-MS, TOTALS					E200.8		Analyst: FJR
Arsenic	0.00502	0.00020		mg/L	1	0.500	11/11/2019
Chromium	0.00307	0.00040		mg/L	1	0.282	11/11/2019
Copper	0.00463	0.00020		mg/L	1	0.301	11/11/2019

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Original



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Analytical Report

(wastewater)

WO#: 19110733

Date Reported 11/19/2019

CLIENT: East Chicago Sanitary District **Collection Date:** 11/6/2019 9:31:00 AM
Project: S-901
Lab ID: 19110733-002 **Matrix:** WASTEWATER
Client Sample ID #901
Sample Location:

Analyses	Result	RL	Qual	Units	DF	PL	Date Analyzed
METALS IN WATER BY ICP-MS, TOTALS				E200.8	Analyst: FJR		
Lead	0.00071	0.00020		mg/L	1	0.224	11/11/2019
Molybdenum	0.0372	0.00020		mg/L	1	0.200	11/11/2019
Nickel	0.0111	0.00100		mg/L	1	0.390	11/11/2019
Zinc	0.101	0.00040		mg/L	1	1.48	11/11/2019

Qualifiers:	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	PQL	Practical Quantitation Limit
	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Original

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058


Laboratory Job ID: 180-98460-1

Client Project/Site: Cyanide 19110733

For:

Element Materials Technology
328 Ley Rd
Suite100
Fort Wayne, Indiana 46825

Attn: Katie Hernandez



Authorized for release by:
11/19/2019 11:17:23 AM

Dominic Nestasie, Manager of Project Management
(412)963-2453

dominic.nestasie@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

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Case Narrative

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Job ID: 180-98460-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-98460-1

Receipt

The sample was received on 11/8/2019 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

General Chemistry

The following sample 19110733-001A (180-98460-1) was diluted to bring the concentration of target analytes within the calibration range. Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Sample Summary

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-98460-1	19110733-001A	Water	11/06/19 09:31	11/08/19 09:00	

Method Summary

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Client Sample ID: 19110733-001A

Lab Sample ID: 180-98460-1

Date Collected: 11/06/19 09:31

Matrix: Water

Date Received: 11/08/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	OIA - 1677		10			298583	11/18/19 13:44	CAK	TAL PIT
Instrument ID: ALPKEM2										

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

CAK = Chuck Kieda

Client Sample Results

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Client Sample ID: 19110733-001A

Lab Sample ID: 180-98460-1

Date Collected: 11/06/19 09:31

Matrix: Water

Date Received: 11/08/19 09:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	0.12		0.020	0.0036	mg/L			11/18/19 13:44	10

QC Sample Results

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-298583/89

Matrix: Water

Analysis Batch: 298583

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.00036	mg/L			11/18/19 13:33	1

Lab Sample ID: LCS 180-298583/88

Matrix: Water

Analysis Batch: 298583

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Available	0.0501	0.0466		mg/L		93	82 - 132

QC Association Summary

Client: Element Materials Technology
Project/Site: Cyanide 19110733

Job ID: 180-98460-1

General Chemistry

Analysis Batch: 298583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-98460-1	19110733-001A	Total/NA	Water	OIA - 1677	
MB 180-298583/89	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-298583/88	Lab Control Sample	Total/NA	Water	OIA - 1677	



CHAIN OF CUSTODY RECORD

Omega COCID 125095

PAGE: 1

OF: 1

ADDRESS

Element Materials Technology - Fort Wayne
328 Ley Rd.
Fort Wayne, IN 46825
TEL: (260) 424-1622
FAX: (260) 424-9124
Website: www.element.com

SUB CONTRACTOR: TEST_AMERICA		COMPANY: Test America		SPECIAL INSTRUCTIONS / COMMENTS:	
ADDRESS: Sample Receiving					
CITY, STATE, ZIP: Nashville, TN 37204					
PHONE: (800) 765-0980		FAX: (615) 726-3404			
ACCOUNT #: EFW035122		PO #:			
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED
1	19110733-001A	S-901 Grab	500HDPENAOH	Wastewater	11/6/2019 9:31:00 AM
CYAN FREE (OIA1677)				1	
				COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.	

Due 11-13-19

Available



Relinquished By: Shirley Watson	Date: 11/7/2019	Time: 4:21 PM	Received By: Shirley Watson	Date: 11/7/2019	Time: 9:00	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	FOR LAB USE ONLY	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Temp of samples _____ °C Attempt to Cool ?	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/>		Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>		Comments:			
Note: RUSH requests will incur surcharges!							

Login Sample Receipt Checklist

Client: Element Materials Technology

Job Number: 180-98460-1

Login Number: 98460

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



element

Chain of Custody

Laboratory
Number:

19110733

Client Information:		Billing Information:		PO Number:		Project Name/Number:		Page 1 of 1	
East Chicago Sanitary District		Same				S-901		Matrix Code	
Contact Name: Nickie Geros				Quote Number:		Sampler's Signature		DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge O = Oil F = Food NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid	
Address: 5201 Indianapolis Blvd				Required QC Level		Shipping Method: <i>Hu</i>			
City, State Zip: East Chicago IN 46312				Bill Monthly		UPS / FedEx / Airborne DHL / Element / Hand / Mail			
Phone Number: 219-391-8466		Ext. 240		Ext:					
Fax Number:				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
E-mail Address: ngeros@eastchicago.com									

Sample ID/Description	Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container	Pres.	Requested Tests				Comments									
	Date	Time				Grab / Composite	Matrix	Quantity	Type P=Plastic, G=Glass, V=Vial		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	CYANIDE 1677	Oil & Grease	Bis(2EH) Phthalate	*Metals	NH ₃ , T.PHOS, COD	PHENOL	300:Fl	TSS
S-901 Grab	11-6-19	9:31	Grab	WW	1	P	NAOH	X											
S-901 Grab			Grab	WW	1	G	H2SO4		X										
S-901 Grab			Grab	WW	1	G	NONE			X									
S-901 Composite			Comp	WW	1	P	HNO3				X								
S-901 Composite			Comp	WW	1	P	H2SO4					X							
S-901 Composite			Comp	WW	1	G	H2SO4						X						
S-901 Composite			Comp	WW	2	P	NONE								X				

Relinquished by	Date/Time	Received by	Date/Time	Composite Sampler
<i>M. L. L. L.</i>	11-7-19/10:35	<i>Dr. M. L. L. L.</i>	11-7-19/10:35	Start Date/Time: 11-6-19 End Date/Time: 11-7-19
<i>Dr. M. L. L. L.</i>	11-7-19/15:45	<i>Dr. M. L. L. L.</i>	11-7-19/15:45	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 11°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31 Columbus, IN 47201 USA P 812-375-0531 F 812-375-0731	328 Ley Road, Suite 100 Fort Wayne, IN 46825 USA P 260-471-7000 F 260-471-7777	909 Executive Dr. Warsaw, IN 46580 USA P 574-267-3305 F 574-269-6569	3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707	2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540
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